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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/580,563	05/30/2000	Kevin Peter Picott	1252.1051	1726

21171 7590 07/30/2003

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WASHINGTON, DC 20005

EXAMINER
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GOOD JOHNSON, MOTILEWA

ART UNIT	PAPER NUMBER
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2672

12

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/580,563

Applicant(s)

PICOTT, KEVIN PETER

Examiner

Motilewa A. Good-Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is responsive to the following communications: Application, filed on 05/30/2000; IDS, paper #2, filed on 05/30/2000; Amendment A, filed 11/27/2002; Amendment B, filed 04/28/2003.
2. Claims 1-3 and 5-22 are pending in this application. Claims 1, 17 and 19-22 are independent claims. Claims 1-3, 5, 7-9, 11, 15, 17 and 19-22 have been amended.
3. The present title of the application is "System for passing algorithms with polymorphic parameter sets in a dependency graph of a graphics creation process" (as originally filed).

### ***Continued Examination Under 37 CFR 1.114***

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/27/2003 has been entered.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 5-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Gafter, U.S. Patent Number 5,666,296, "Method and Means for Translating a Data-Dependent Program to a Data Flow Graph with Conditional Expression", class 716/3, 09/09/1997.

As per independent claim 1, a method, comprising: evaluating a dependency graph of a graphics creation process using a computer, comprising: passing a pointer to an algorithm associated with a first dependency node to a second dependency node allowing the second dependency node to execute the algorithm; (Gafter discloses a symbolic evaluation of an algorithm and converting the algorithm into a flow graph having a plurality of nodes each node representing at least one of the plurality of statements, col. 1, lines 55-67) and executing the algorithm as a part of an evaluation of the second dependency node. (Gafter discloses evaluating each node symbolically in succession according to control flow, col. 2, lines 15-26)

With respect to dependent claim 2, algorithm comprises a self-evaluating data structure. (Gafter discloses computing reverse dominators from the control flow graph and the reverse dominators control that the give node is guaranteed to pass, i.e. self evaluating, col. 3, line 64 – col. 4, line 20)

With respect to dependent claim 3, algorithm comprises an algorithm having a defined set and type of inputs and outputs. (Gafter discloses the algorithm has at least

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one condition branching statement dependent on the value of at least one input datum, col. 1, lines 61-67)

With respect to dependent claim 5, structure comprises an algorithm calling method. (Gafer discloses the algorithm has at least one condition branching statement dependent on the value of at least one input datum, col. 1, lines 61-67)

With respect to dependent claim 6, evaluating comprises determining a type of a passed parameter. (Gafer discloses computing reverse dominators from the control flow graph and the reverse dominators control that the give node is guaranteed to pass, i.e. self evaluating, col. 3, line 64 – col. 4, line 20)

With respect to dependent claim 7, the algorithm parameter types are identified dynamically as the dependency graph is executed. (Gafer discloses the symbolic evaluation yields the data flow graph representation, col. 3, lines 8-15)

With respect to dependent claim 8, the data structure contains information describing a set of input and output parameters the algorithm accepts. (Gafer discloses a translation process in which the data-dependent control flow path is evaluated to see if it can be handled, col. 3, lines 16-21)

With respect to dependent claim 9, the information determines if algorithm attribute types within the dependency graph are compatible. (Gafer discloses the control flow graph having a conditional expression, col. 3, lines 50-63)

With respect to dependent claim 10, data structure comprises default values for all input and output parameters. (Gafer discloses implementing a true and false conditional branch in the shadow symbol table, col. 11, lines 1-37)

With respect to dependent claim 11, further comprising mapping parameters of first and second algorithms of the first and second nodes. (Gafer discloses a shadow symbol table that contains the entries for the argument and variables, col. 4, lines 48-65)

With respect to dependent claim 12, mapping comprises using an index. (Gafer discloses a shadow symbol table, i.e. index, col. 4, lines 48-65)

With respect to dependent claim 13, mapping defines a relationship where input parameters are ignored and output parameters are unmapped and take on default values. (Gafer discloses implementing a true and false conditional branch in the shadow symbol table, col. 11, lines 1-37)

With respect to dependent claim 14, parameter value and type are passed for the mapping. (Gafer discloses symbolically evaluating each node of each branch, col. 4, lines 11-20)

With respect to dependent claim 15, the algorithm data structure and value index are passed for the mapping. (Gafer discloses in tables R and S, for the value of the variable b, evaluating the algorithm of the entire data structure, col. 11, lines 10-35)

With respect to dependent claim 16, mapping comprises an index remapping and a matrix of data casting methods, which will change one type of data into another. (Gafer discloses recursive interpretation of the branch nodes, col. 5, lines 45-55)

As per independent claim 17, a method comprising: evaluating a dependency graph of a graphics creation process using a computer, comprising: passing a pointer to an algorithm of a first dependency node to a second dependency node allowing the

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second dependency node to execute the algorithm of the first dependency node . . .

(Gafer discloses a symbolic evaluation of an algorithm and converting the algorithm into a flow graph having a plurality of nodes each node representing at least one of the plurality of statements, col. 1, lines 55-67) comprising a self evaluating data structure comprising an algorithm calling method and containing information describing a set of input and output parameters . . . (Gafer discloses computing reverse dominators from the control flow graph and the reverse dominators control that the give node is guaranteed to pass, i.e. self evaluating, col. 3, line 64 – col. 4, line 20) determines if algorithm attribute types within the dependency graph are compatible and comprising default values . . . ; (Gafer discloses a translation process in which the data-dependent control flow path is evaluated to see if it can be handled, col. 3, lines 16-21) mapping parameters of first and second algorithms of the first and second nodes, where the mapping comprises an index, defines a relationship where input parameter are ignored and output parameters a unmapped and take on default values . . . ; Gafer discloses a shadow symbol table that contains the entries for the argument and variables, col. 4, lines 48-65) and executing the algorithm of the first dependency node as part of an evaluation of the second dependency node using the pointer . . . (Gafer discloses evaluating each node symbolically in succession according to control flow, col. 2, lines 15-26)

With respect to dependent claim 18, an index remapping and a matrix of data casting methods, which will change one type of data into another. (Gafer discloses recursive interpretation of the branch nodes, col. 5, lines 45-55)

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As per independent claims 19-20, they are rejected based upon similar rational as above independent claim 1.

As per independent claim 21, it is rejected based upon similar rational as above independent claim 1 and dependent claims 2-16 respectively.

As per independent claim 22, it is rejected based upon similar rational as above independent claim 17.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,550,059 B1      Choe et al.    717/159      04/15/2003    10/04/1999

Method for generating optimized vector instructions from high level programming languages.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-3 and 5-22 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is

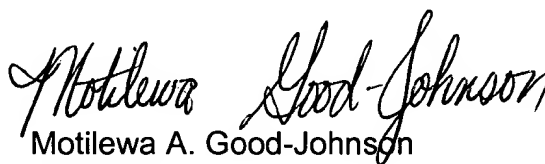


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(703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

  
Motilewa A. Good-Johnson  
Examiner  
Art Unit 2672

mgj  
July 26, 2003